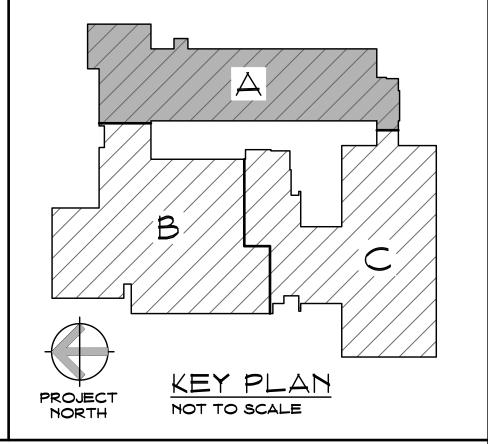




Revision: Description:



Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School

284 Sandy Beach Road
Ellington, Connecticut 06029

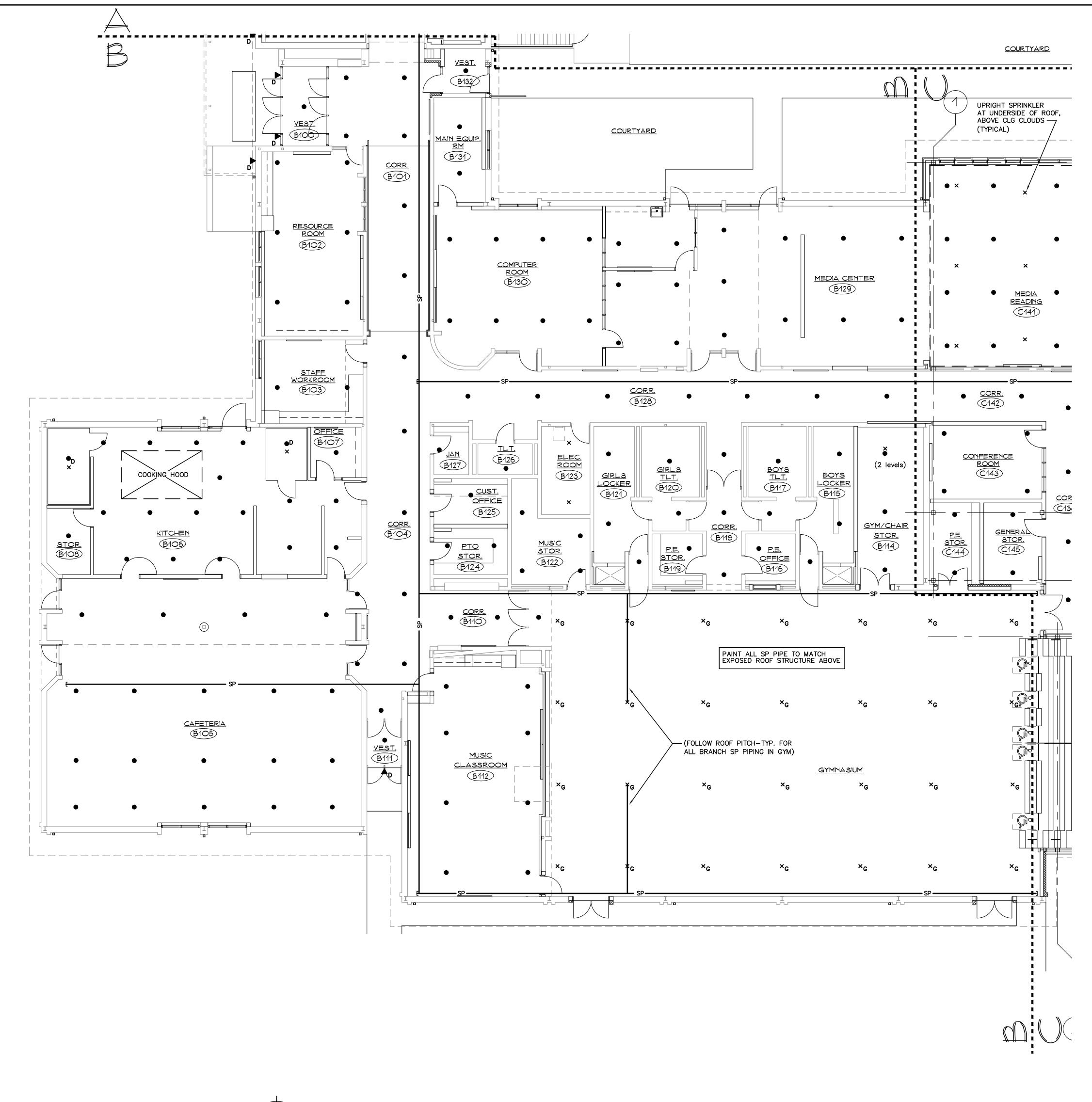


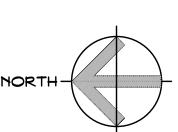
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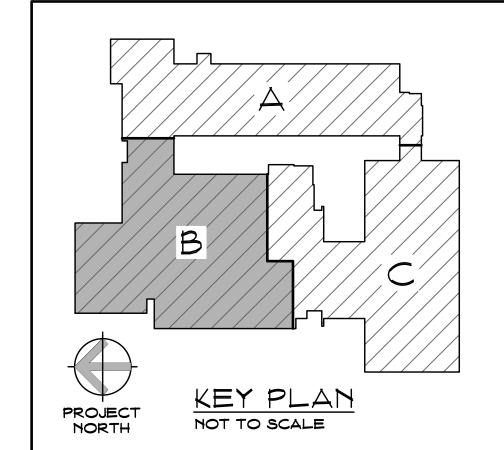
Revised By:	Drawing Title:
3	1ST FLOOR
	FIRE PROTECTION PLAN,
	AREA "A" State Project Number: 048-0058 EA/RR/PS
_	

Drawing Number: JUNE 18, 2013 Project Number: 12.140





SCALE: 1/8" = 1'-0"



Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School

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Ellington, Connecticut 06029



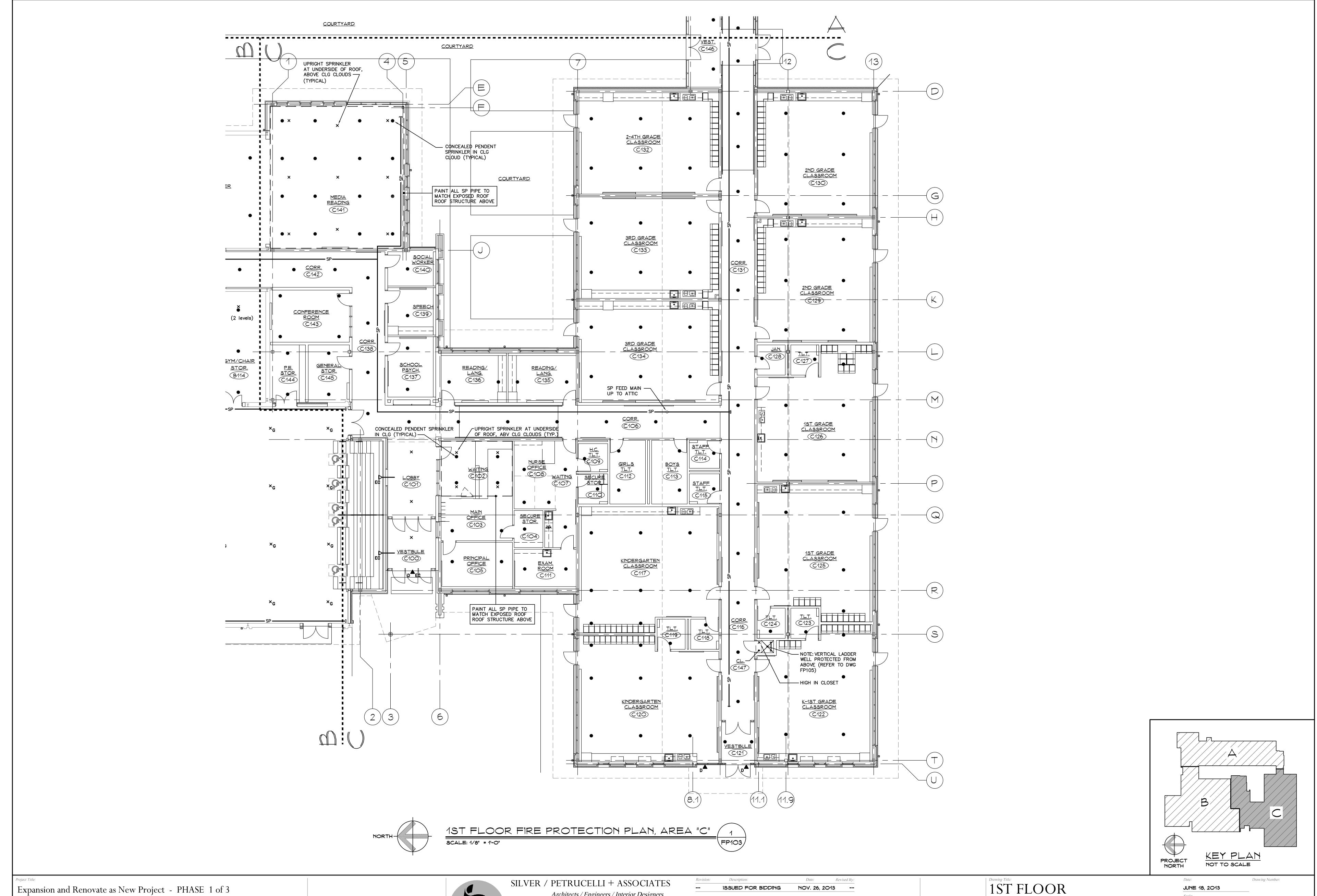
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Revision:	Description:	Date:	Revised By:
	ISSUED FOR BIDDING	NOV. 26, 2013	3

1ST FLOOR FIRE PROTECTION PLAN, AREA "B"
State Project Number: 048-0058 EA/RR/PS

Date:	Drawing Number:
JUNE 18, 2013	
Scale:	
AS NOTED	ED102
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MBQ	



Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School

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Ellington, Connecticut 06029



Architects / Engineers / Interior Designers

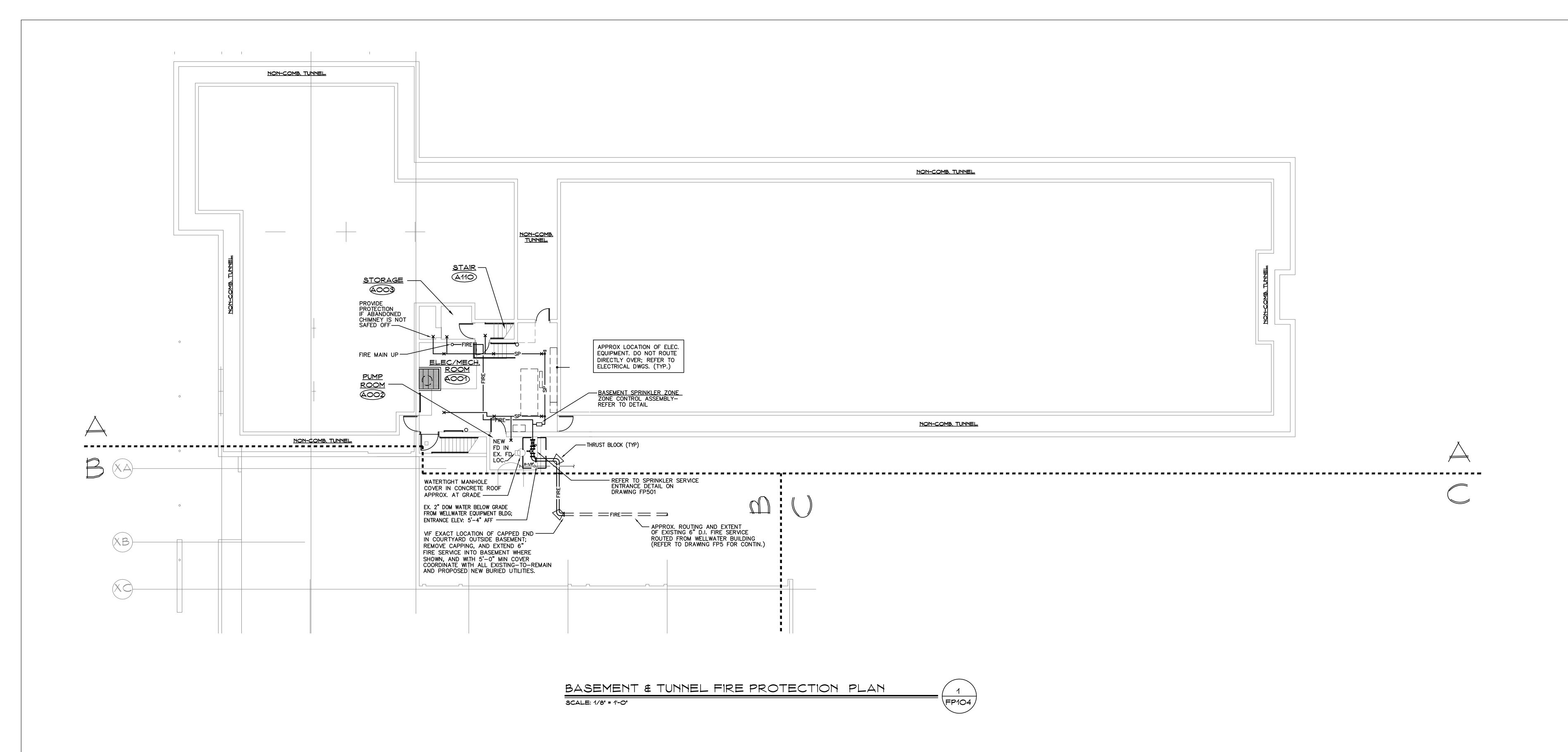
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V 151011.	Description.	Date.	Revised by.
ISSUED FOR BIDDING		ISSUED FOR BIDDING NOV. 26, 2013	

FIRE PROTECTION PLAN, AREA "C"
State Project Number: 048-0058 EA/RR/PS

FP103 AS NOTED Project Number:

12.140



Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029



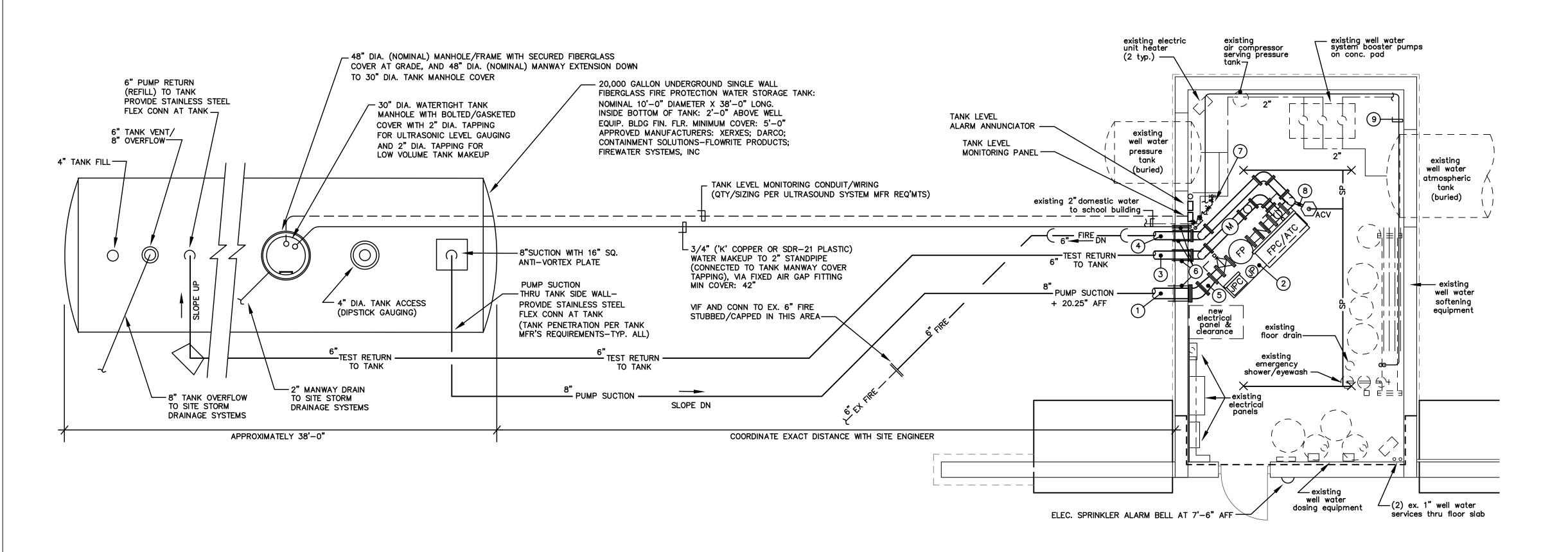
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BASEMENT AND TUNNEL FIRE PROTECTION PLAN

JUNE 18, 2013 -FP104 State Project Number: 048-0058 EA/RR/PS Project Number: 12.140



#### <u> NU,MBERED NOTES - WELL EQUIPMENT BUILDING FIRE PROTECTION PLAN</u>

REFER TO FIRE PROTECTION DETAILS FOR SCHEMATIC PIPING DETAIL OF FIRE PUMP SYSTEM, AND STORAGE TANK DETAILS

- (1) 8" SUCTION FROM UNDERGROUND FIRE WATER STORAGE TANK; MINIMUM COVER: 5'-0"; ENTRY ELEVATION LEVEL WITH FIRE PUMP INLET ELEVATION (C.L. 1'-8 1/4"AFF)
- PRE-PIPED, PRE-PACKAGED FIRE PUMP SYSTEM ON METAL SKID; PACKAGE INCLUDES: SYSTEM INLET AND DISCHARGE FLANGES; FIRE PUMP WITH SUPERVISED PUMP INLET SHUTOFF AND OUTLET CHECK VALVES; JOCKEY PUMP IN PREPIPED BRANCH PIPING, TEST HEADER TEE WITH SUPERVISED CONTROL VALVE; TEST HEADER (SHIPPED LOOSE FOR FIELD INSTALLATION): FIRE PUMP CONTROLLER WITH AUTOMATIC TRANSFER SWITCH: JOCKEY PUMP CONTROLLER. MOUNT ON FIELD-POURED 6" THICK CONCRETE PAD, 8" LARGER THAN SKID LENGTH x WIDTH DIMENSIONS.

NOTE: A FIELD FABRICATED FIRE PUMP SYSTEM MAY BE SUBMITTED WITH ACCOMPANYING CREDIT OFFER AND PRELIMINARY LAYOUT DRAWING. THE PROPOSED SUBSTITUTION MUST MEET SPECIFIED PERFORMANCE REQUIREMENTS AND CONFORM TO NFPA 20 IN ALL RESPECTS, AND SYSTEM SPACE REQUIREMENTS MUST ALLOW ADEQUATE ACCESS TO ALL EXISTING AND PROPOSED WELL BUILDING EQUIPMENT, FOR MAINTENANCE, ADJUSTMENT AND REPAIR.

- (3) 6" PUMP DISCHARGE TO BUILDING; MAINTAIN 5'-0" COVER MINIMUM; VIF EXACT LOCATION OF EXISTING STUBBED 6" BURIED FIRE MAIN IN VICINITY OF WELL EQUIPMENT BUILDING, AND CONNECT TO SAME, PROVIDING ALL REQUIRED TRANSITION FITTINGS. REFER TO FIRE PROTECTION SITE PLAN FOR ROUTING SCHEMATIC. VIF ALL EXISTING ROUTING, AND ADJUST FINAL INSTALLATION TO COORDINATE WITH FIELD VERIFIED EXISTING CONDITIONS.
- 6" PUMP TEST HEADER TEE; 4" TEST PIPING TO FREE STANDING PUMP TEST HEADER, AND TO FLOWMETER; FLOWMETER DISCHARGE SHALL BE TO FIRE WATER STORAGE TANK
- 5) 8X6 REDUCING ELBOW
- 6 SLEEVE/WATERPROOF THROUGH EXTERIOR WALL (TYPICAL) PROVIDE LINK-SEAL AT UNDERGROUND WALL PENETRATIONS
- 7) TAP INTO EX. 2" DOMESTIC WATER TO BUILDING, ROUTING LOW; RISE TO CEILING AND PROVIDE 3/4" WATER MAKEUP WITH MANUAL SHUTOFF, SOLENOID CONTROL VALVE AND WATTS 009-QT-S RÉDUCED PRESSURE ZONE BACKFLOW PREVENTER ASSEMBLY (HIGH); PIPE RPD RELIEF VIA AIR GAP FITTING DOWN TO OPENEND 6" AFF, COORDINATING EXACT ROUTING AND TERMINATION LOCATION WITH ALL EXISTING INSTALLATIONS AND NEW WORK OF ALL OTHER TRADES
- (8) CONNECT INTO 6" FIRE PUMP DISCHARGE TO BUILDING FP SYSTEMS AND PROVIDE SPRINKLER PROTECTION FOR WELL EQUIPMENT BUILDING, HYDRAULICALLY SIZED: SUPERVISED CONTROL VALVE, ALARM CHECK VALVE WITH MAIN TEST PIPED OVERHEAD TO DROP ON AND EXIT THRU WEST WALL, FLOW SWITCH ON ACV DISCHARGE, AND ORDINARY HAZARD-GROUP 1 WET SPRINKLER SYSTEM OF UPRIGHT SPRINKLERS, COORDINATED WITH ALL ETR AND NEW INSTALLATIONS.
- (9) AS MUCH AS PITCH AND EXISTING INSTALLATIONS ALLOW, ROUTE GRAVITY DRAINS ON WALLS TO OPENEND NEAR EXISTING FLOOR DRAIN (DO NOT ROUTE UNDER ELECTRICAL PANELS)

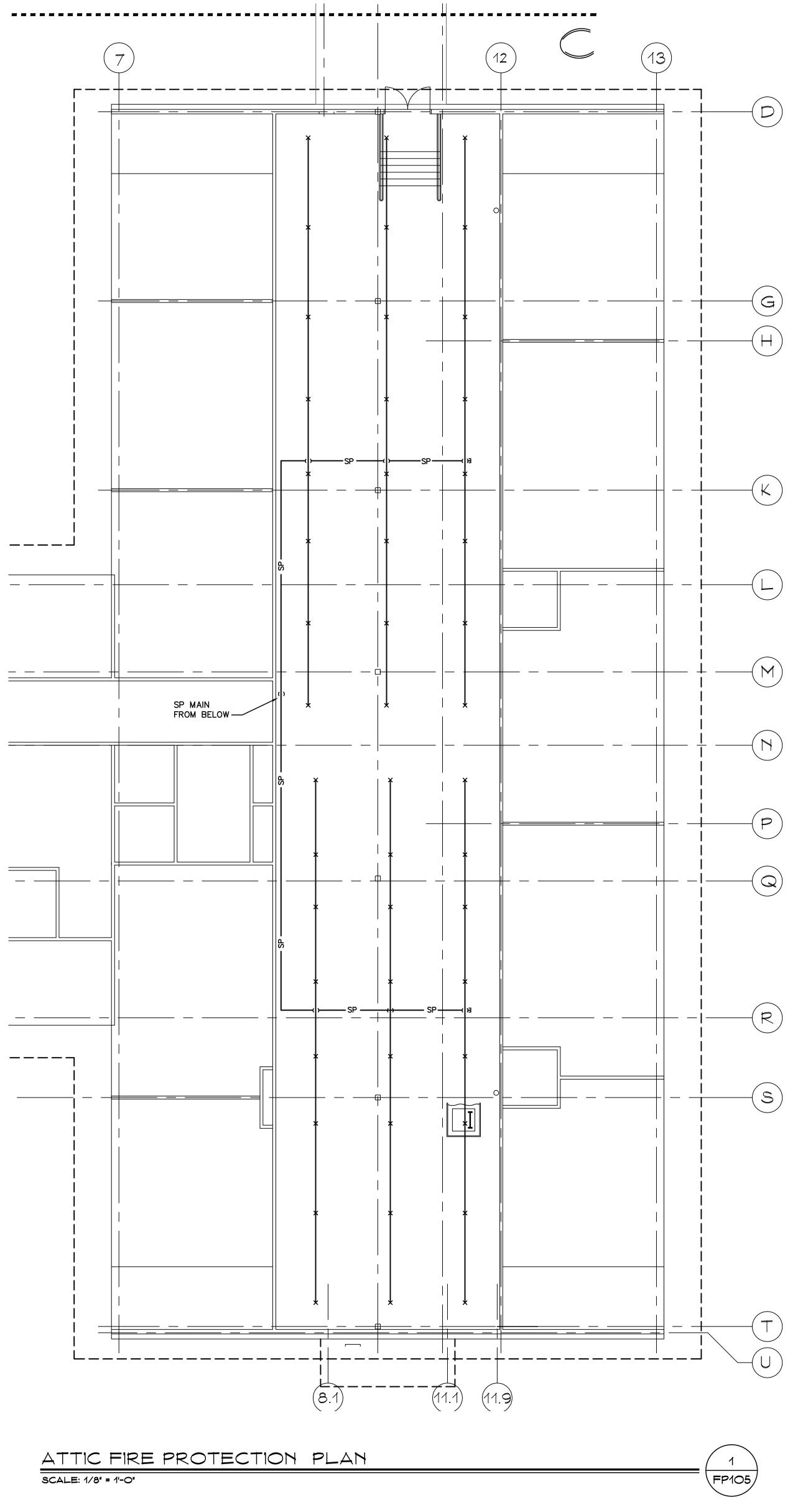
WELL EQUIPMENT BUILDING AREA FIRE PROTECTION PLAN

SCALE: 1/4" = 1'-0"



NOV. 26, 2013 --

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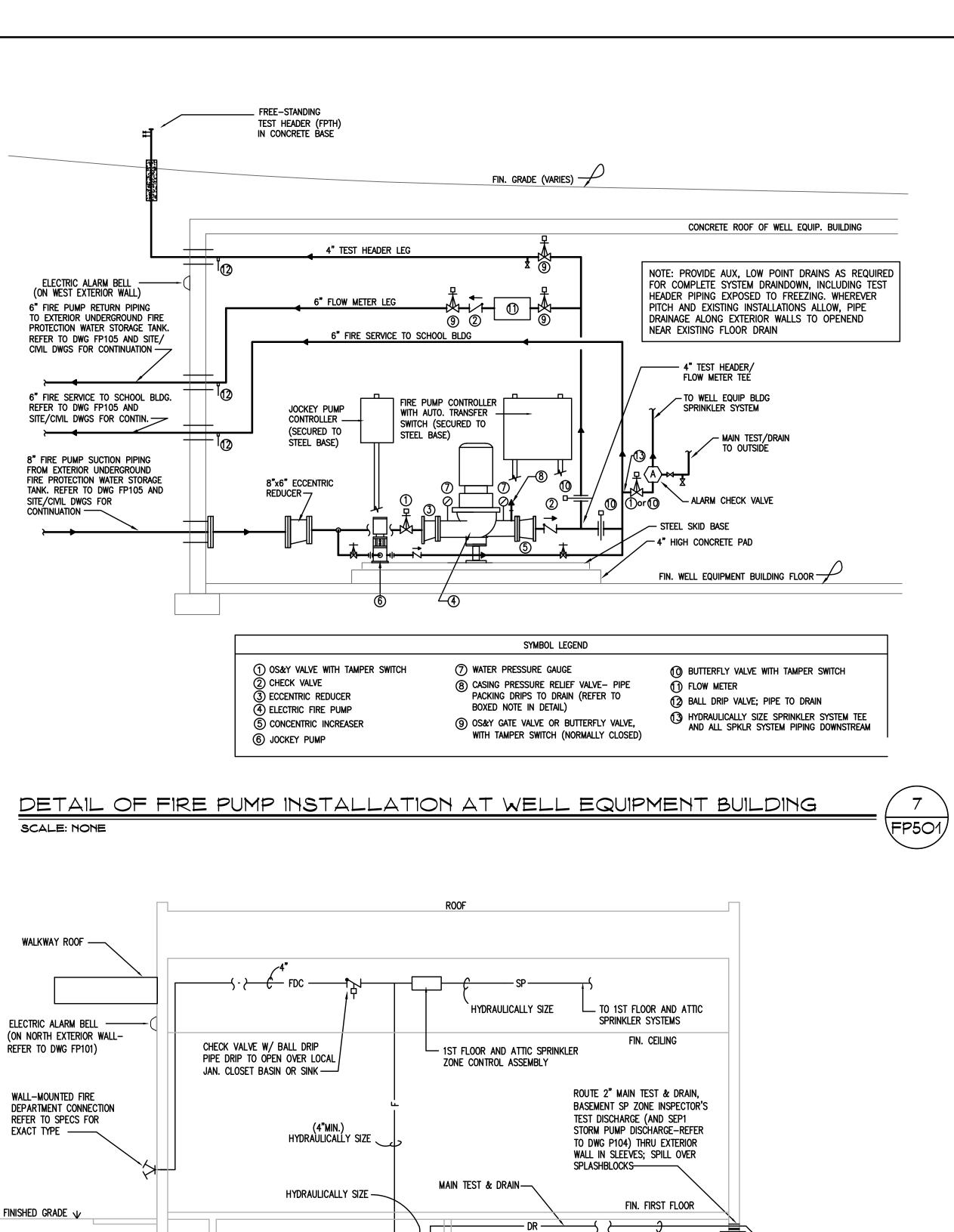
ATTIC AND WELL EQUIPMENT BLDG. AREA FIRE PROTECTION PLANS
State Project Number: 048-0058 EA/RR/PS JUNE 18, 2013 FP105 Project Number: 12.140

Expansion and Renovate as New Project - PHASE 1 of 3

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— TO BASEMENT

ZONE CONTROL ASSEMBLY

- PROVIDE PIPE SUPPORT STANCHIONS TO

SUPPORT PIPING ABOVE FLOOR

- O. S. & Y. GATE ZONE CONTROL

(OPEN-NORMAL; CLOSED-ALARM)

- PIPE TO SPRINKLER ZONE

VALVE W/TAMPER SWITCH

PRESSURE GAUGE

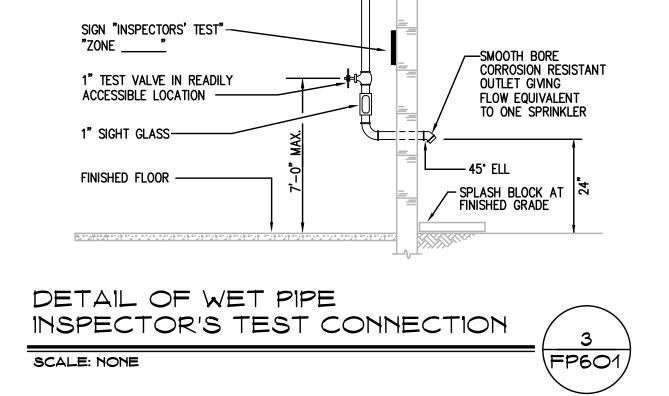
SPRINKLER SYSTEMS

BASEMENT ZONE

FIN. BASEMENT

FP501

INSPECTOR'S TEST —



2'x2' CEILING TILE

SCALE: NONE

NOTE: LOCATION OF SPRINKLER HEAD IN GRID

DIMENSIONED OTHERWISE ON PLANS

DETAIL OF TYPICAL

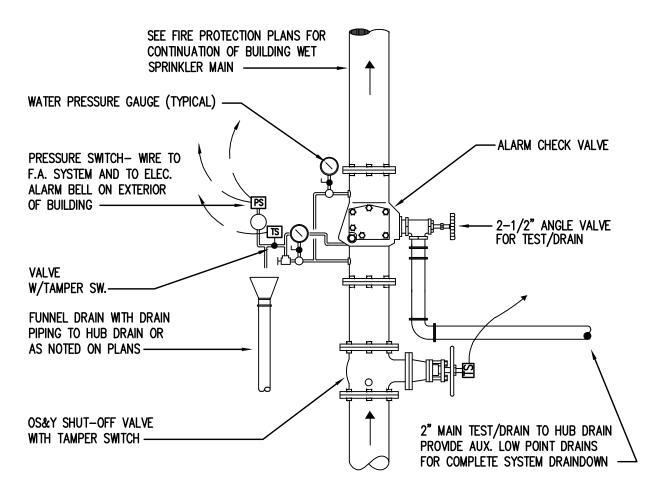
SPRINKLER LOCATION

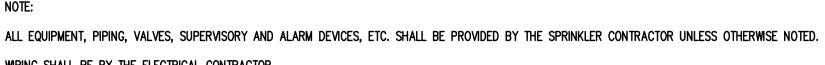
IN CEILING TILE GRID

FROM END OF

REMOTE BRANCH LINE

SHALL BE TYPICAL EXCEPT WHERE SPECIFICALLY



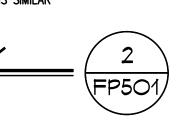


NOT ALL TRIM IS SHOWN. PROVIDE ALL TRIM, SUPPORT EQUIPMENT, ETC. REQUIRED FOR A COMPLETE AND CORRECTLY FUNCTIONING INSTALLATION PER NFPA 13 AND MFR'S INSTALLATION INSTRUCTIONS.

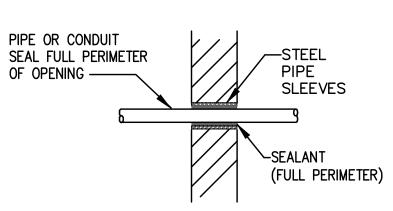
DETAIL SHOWN IS FOR ALARM CHECK VALVE ASSEMBLY IN BASEMENT PUMP ROOM; INSTALLATION AT WELL EQUIPMWNT BUILDING IS SIMILAR

DETAIL OF WET PIPE

RISER AND ALARM CHECK VALVE ASSEMBLY SCALE: NONE



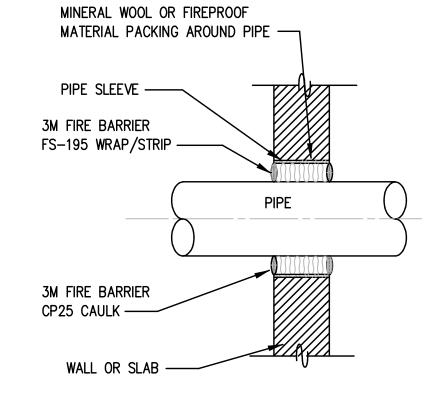
#### FIRE PROTECTION LEGEND (NOT ALL SYMBOLS ARE USED) SYMBOL ABBREVIATION DESCRIPTION FIRE MAIN PIPING —— F —— SPRINKLER PIPING DRY SPRINKLER PIPING FIRE DEPARTMENT CONNECTION PIPING —— DR ——— DRY RECESSED PENDENT SPRINKLER HEAD (QUICK RESPONSE) RECESSED PENDENT SPRINKLER HEAD (QUICK RESPONSE) CONCEALED PENDENT SPRINKLER HEAD (QUICK RESPONSE) UPRIGHT SPRINKLER HEAD (QUICK RESPONSE) UPRIGHT SPRINKLER HEAD (QUICK RESPONSE) $\times_{\mathsf{G}}$ WITH HEAD GUARD UPRIGHT SPRINKLER HEAD (QUICK RESPONSE) × WITH BAFFLE PLATE SIDEWALL SPRINKLER HEAD (QUICK RESPONSE) $\triangleright$ (NORMAL 14'x14' THROW) SIDEWALL SPRINKLER HEAD (QUICK RESPONSE) EC D (EXTENDED COVERAGE) DRY SIDEWALL SPRINKLER HEAD (QUICK RESPONSE) (NORMAL 14'x14' THROW) DRY SIDEWALL SPRINKLER HEAD (QUICK RESPONSE) (EXTENDED COVERAGE) OUTSIDE SCREW & YOKE VALVE OSY W/TS WITH TAMPER SWITCH CHECK VALVE FLOW SWITCH TEST & DRAIN VALVE FIRE DEPARTMENT CONNECTION (REFER TO SPECIFICATIONS FOR EXACT TYPE) PIPING DOWN PIPING UP PRESSURE GAUGE ALARM CHECK VALVE ASSEMBLY



ELECTRIC ALARM BELL

WALL PENETRATIONS AT NON-RATED WALLS SCALE: NONE

> FOR WALL PENETRATIONS AT RATED WALLS, SEE SPECIFICATION SECTION "FIRESTOPPING"



DETAIL OF FIREPROOFING OF PIPES PENETRATING WALLS, SLABS, SHAFT WALLS

FP501 SCALE: NONE

### FIRE PROTECTION DESIGN CRITERIA

NOTE: ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE, WHERE QUICK RESPONSE LISTING IS AVAILABLE FOR THAT SPRINKLER TYPE.

# WHERE DISTRIBUTION PIPING CAN BE RUN ON WARM SIDE OF BUILDING INSULATION:

CLASSROOMS, MEETING ROOMS, OFFICES, TOILET AND SHOWER ROOMS, LOBBIES, VESTIBULES, ENTRIES. CORRIDORS. STAIRS. PUBLIC ACCESS AREAS (NOT INCLUDING STORAGE AREAS)- INSTALL A HYDRAULICALLY BALANCED WET SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.10 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1500 SQUARE FOOT AREA. HOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). SPRINKLER HEAD SPACING 225 SQUARE FT. PER HEAD MAX. FOR UPRIGHT AND PENDENT SPRINKLER HEADS; PROVIDE PENDENT (REFER TO PLANS/SPECS FOR TYPES) IN FINISHED CEILINGS, UPRIGHT IN AREAS WITHOUT CEILINGS.

KITCHEN, ELECTRICAL ROOMS, MECHANICAL ROOMS - INSTALL A HYDRAULICALLY BALANCED WET SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.15 GPM PER SQUARE FOOT OVER THE MOST REMOTE AREA UP TO A MAXIMUM OF 1500 SQUARE FOOT AREA. HOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). SPRINKLER HEAD SPACING: 130 SQUARE FT. PER HEAD MAX. SPRINKLER HEADS; PROVIDE PENDENT (REFER TO PLANS/SPECS FOR TYPES) IN FINISHED CEILINGS. ÙPRIGHT IN AREAS WITHOUT CEILINGS.

STORAGE ROOMS, INCLUDING JANITOR'S CLOSETS, KITCHEN DRY STORAGE, CLOSETS, FILE ROOMS, CHAIR AND TABLE STORAGE, DISPLAY ENCLOSURES - INSTALL A HYDRAULICALLY BALANCED WET SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.20 GPM PER SQUARE FOOT OVER THE MOST REMOTE AREA UP TO A MAXIMUM OF 1500 SQUARE FOOT AREAHOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). SPRINKLER HEAD SPACING: 130 SQUARE FT. PER HEAD MAX. SPRINKLER HEADS; PROVIDE PENDENT (REFER TO PLANS/SPECS FOR TYPES) IN FINISHED CEILINGS, UPRIGHT IN AREAS WITHOUT CEILINGS.

CEILING SPACES ENCLOSED BY LIMITED COMBUSTIBLE OR COMBUSTIBLE CONSTRUCTION - SPRINKLER PROTECTION IS REQUIRED IN THESE CEILING SPACES. CEILING SPACES SHALL NOT BE USED FOR STORAGE. INSTALL A HYDRAULICALLY
BALANCED WET SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.10 GPM PER SQUARE FOOT OVER THE MOST REMOTE AREA UP TO A MAXIMUM OF 1500 SQUARE FOOT AREA. HOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). PROVIDE UPRIGHT SPRINKLER HEADS; SPRINKLER HEAD SPACING SHALL BE ACCORDING TO THE REQUIREMENTS OF NFPA 13, CHAPTER 8 FOR THE TYPE OF CONSTRUCTION ENCOUNTERED.

CEILING SPACES ENCLOSED BY LIMITED COMBUSTIBLE OR COMBUSTIBLE CONSTRUCTION (DRY SYSTEM)- SPRINKLER PROTECTION IS REQUIRED IN THESE CEILING SPACES. CEILING SPACES SHALL NOT BE USED FOR STORAGE. INSTALL A
HYDRAULICALLY BALANCED DRY SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.10 GPM PER SQUARE FOOT OVER THE MOST REMOTE AREA UP TO A MAXIMUM OF 1950 SQUARE FOOT AREA. HOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). PROVIDE UPRIGHT SPRINKLER HEADS; SPRINKLER HEAD SPÁCING SHALL BE ACCORDING TO THE REQUIREMENTS OF NFPA 13, CHAPTER 8 FOR THE TYPE OF CONSTRUCTION ENCOUNTERED.

ATTIC SPACES (CONTAINING MECHANICAL EQUIPMENT) - ATTIC SPACES SHALL NOT BE USED FOR STORAGE. INSTALL A HYDRAULICALLY BALANCED DRY SPRINKLER SYSTEM TO PROVIDE A DENSITY OF 0.15 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1950 SQUARE FOOT AREA. HOSE ALLOWANCE SHALL NOT BE CALCULATED INTO PUMP SIZING (NFPA 13-11.2.3.1.2). SPRINKLER HEAD SPACING: PER THE REQUIREMENTS OF NFPA 13 FOR THE TYPE OF CONSTRUCTION AND ROOF SLOPE ENCOUNTERED. PROVIDE UPRIGHT SPRINKLERS (SPECIAL APPLICATION ATTIC SPRINKLERS ARE NOT ALLOWED UNLESS APPROVED FOR ORDINARY HAZARD APPLICATIONS)

FOR AREAS WITH CEILINGS OR ROOFS SLOPED GREATER THAN 2 IN 12. INCREASE THE CALCULATED AREA OF COVERAGE BY 30%

#### FIRE PROTECTION NOTES

- 1. INSTALL SPRINKLER SYSTEMS IN ACCORDANCE WITH MINIMUM STANDARDS OF NFPA 13, 2002. USE ONLY NEW ITEMS: LISTED FOR ALL ITEMS CRITICAL TO SYSTEM INTEGRITY/PERFORMANCE (SPRINKLERS, PIPING, CONTROL VALVES, HANGERS, ETC.). ITEMS NOT CRITICAL TO SYSTEM PERFORMANCE (DRAIN SYSTEM PIPING/DEVICES, FOR EXAMPLE) NEED NOT BE LISTED BUT SHALL BE SUBMITTED TO AND APPROVED BY THE AUTHORITY HAVING JURISDICTION
- 2. INSTALL FIRE PUMP SYSTEM (PUMPS, CONTROLS/ALARMS, POWER SUPPLIES. PIPING. ETC.) IN ACCORDANCE WITH MINIMUM STANDARDS
- 3. COORDINATE WITH SITE CONTRACTOR IN PROVIDING THE NEW PORTIONS OF THE FIRE SERVICE IN ACCORDANCE WITH MINIMUM APPLICABLE
- STANDARDS OF NFPA 24, CONNECTICUT IN-FORCE EDITION 4. COORDINATE WITH SITE CONTRACTOR IN PROVIDING THE FIRE SUPPRESSION WATER STORAGE TANK/PIPING SYSTEMS IN ACCORDANCE WITH MINIMUM STANDARDS OF NFPA 22, CONNECTICUT IN-FORCE
- 5. ALL SYSTEM COMPONENTS SHALL BE CAPABLE OF WITHSTANDING A WORKING PRESSURE OF 175 PSI.
- 6. SUPPORT SPRINKLER PIPING IN A SUBSTANTIAL MANNER FROM BUILDING STRUCTURE, AND INDEPENDENT OF THE CEILING MATERIAL. DO NOT USE SPRINKLER PIPING OR HANGERS TO SUPPORT NON-SYSTEM COMPONENTS.
- 7. MAKE REDUCTIONS IN PIPE SIZES WITH ONE-PIECE REDUCING FITTINGS. DO NOT USE BUSHINGS.
- 8. PROVIDE CLEARANCE AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS AND FOUNDATIONS.
- 9. ARRANGE PIPING TO FACILITATE FLUSHING. PROVIDE READILY

REMOVABLE FITTINGS AT ENDS OF ALL CROSS AND FEED MAINS.

- 10. INSTALL ALL PIPING WITH PROVISIONS FOR COMPLETE DRAINAGE. PITCH DRY AND NORMALLY DRY (TEST, DRAIN) SYSTEMS IN ACCORDANCE WITH NFPA 13. WET-PIPE SPRINKLER SYSTEMS MAY BE INSTALLED LEVEL, AND NOT SLOPED.
- 11. DO NOT SCALE DRAWINGS. CHECK SPACE CONDITIONS AT THE
- 12. SECURE AND PAY COSTS OF PERMITS, CERTIFICATES, LICENSES, FLOW TESTS, INSPECTIONS AND APPROVALS.
- 13. REFER TO SPECIFICATION DIVISION 21 SECTIONS FOR SUBMITTAL REQUIREMENTS.
- 14. PROVIDE SPRINKLER SYSTEM ZONES WITH TEST CONNECTIONS TEST VALVE SHOULD BE READILY ACCESSIBLE AND INSTALLED SECURED TO WALL AND 7 FEET ABOVE THE FLOOR, EXCEPT ALL CONTROL AND TEST VALVES IN AREAS WITH FINISHED CEILINGS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS OR ABOVE CEILING ACCESS PANELS. LOCATIONS OF CONTROL AND TEST VALVES ABOVE CEILING SHALL BE IDENTIFIED AT THE CEILING.
- 15. INSTALL SPRINKLERS BENEATH DUCTS AND OTHER OBSTRUCTIONS TO SPRINKLER DISCHARGE WHICH ARE MORE THAN 4 FEET WIDE.
- 16. PROVIDE ALL CONTROL, DRAIN AND TEST VALVES WITH IDENTIFICATION SIGNS AND SUPERVISORY SWITCHES.
- 17. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL SPRINKLER HEADS, DIFFUSERS, LIGHTS, GRILLES,
- 18. ALL PIPING SHALL BE SUPPORTED FROM THE TOP CHORD OF STRUCTURAL MEMBERS, NOT FROM THE BOTTOM CHORD OR <u>TERMEDIATE WEB MEMBERS.</u>

## SPRINKLER SYSTEM NOTES

#### 1. CONTRACTOR SHALL PROVIDE, AND RUN PIPING TO, ALL SPRINKLER HEADS, COORDINATE EXACT LOCATION OF PIPING, SIZE ALL PIPING, COORDINATE WITH OTHER TRADES, PRODUCE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS AS LISTED THROUGHOUT

2. THE CONTRACTOR SHALL NOT REVISE OR DEVIATE FROM THE MAIN PIPING LAYOUT, VALVES, EQUIPMENT, ACCESSORIES, DEVICES OR SPRINKLER HEADS SHOWN ON THESE DRAWINGS AND ITEMS LISTED IN THE SPECIFICATIONS.

3. <u>ANY SPRINKLER HEAD LAYOUT INDICATED ON THE PLANS IS SHOWN</u> ONLY FOR GENERAL REFERENCE AND COORDINATION WITH OTHER TRADES. DO NOT COUNT THE SPRINKLER HEADS INDICATED FOR BIDDING PURPOSES. THE ACTUAL NUMBER OF SPRINKLERS REQUIRED SHAWLES

4. PROVIDE AND INSTALL WHETHER SHOWN OR NOT, INSIDE THE BUILDING, A 1" INSPECTORS TEST CONNECTION, INCLUDING A 1" SHUTOFF VALVE AND SIGHT GLASS, FOR EACH WET SPRINKLER ZONE.

5. FURNISH AND INSTALL, WHERE DIRECTED BY THE OWNER, A SPARE HEAD CABINET INCLUDING A WRENCH AND SPRINKLER HEAD SPARES OF ALL TYPES, DEGREE RATING AND ORIFICE SIZES INSTALLED.

6. BEFORE ACTUAL INSTALLATION, THIS CONTRACTOR SHALL PREPARE AND SUBMIT ACTUAL DETAILED WORKING DRAWINGS TO THE ELLINGTON FIRE MARSHAL AND OWNER'S INSURANCE UNDERWRITER TO OBTAIN STAMPED FINAL APPROVAL.

7. A STANDARD INSTALLATION OF AUTOMATIC SPRINKLERS ARRANGED AS WET PIPE SYSTEMS IS REQUIRED. THE SPRINKLER CONTRACTOR SHALL HYDRAULICALLY DESIGN THE SPRINKLER SYSTEMS STARTING AT THE BASE OF THE ALARM CHECK VALVE RISERS. EACH SPRINKLER SYSTEM SHALL BE DESIGNED TO PROVIDE DENSITIES AS NOTED OVER THE HYDRAULICALLY MOST REMOTE AREA SERVED BY THAT SYSTEM. ALLOWANCE FOR INSIDE AND OUTSIDE HOSE TO BE INCLUDED.

8. AT EACH ALARM CHECK VALVE, HANG A HYDRAULIC CALCULATION POSTER SIGN EQUAL TO "VIKING" #03573C, FOR THAT SYSTEM'S REMOTE CALCULATED AREA'S DEMAND.

9. CAUTION SIGNS SHALL BE ATTACHED TO ALL CONTROLLING SPRINKLER VALVES AS PER NFPA 13.

10. WHEREVER PIPING IS ROUTED THROUGH A BUILDING EXPANSION JOINT, PROVIDE A PIPE EXPANSION LOOP OR EXPANSION JOINT AT THAT POINT. WHEREVER PIPING ROUTED THROUGH A BUILDING SEISMIC EXPANSION JOINT, PROVIDE SEISMIC EXPANSION JOINT IN

11. ALL DRY OR NORMALLY DRY PIPING SHALL BE GALVANIZED STEEL

SCHEDULE 40; THIS INCLUDES FIRE DEPARTMENT CONNECTION PIPING (TO POINT 5 FEET OUTSIDE THE BUILDING), TEST AND DRAIN PIPING. 12. SPRINKLER FEED MAIN AND SPRINKLER ZONE PIPE SIZES SHALL BE

DETERMINED FROM APPROVED FIRE PUMP RATINGS, FIRE PROTECTION CONTRACTOR SHOP DRAWINGS AND HYDRAULIC CALCULATIONS. MAINTAIN AND CONNECT TO THE EXISTING FIRE MAIN ROUTED BETWEEN WELL EQUIPMENT OUTBUILDING AND SCHOOL BUILDING.

- 13. REFER TO SPECIFICATION DIVISION 21 SECTIONS FOR SUBMITTAL
- 14. ALL PIPING PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED WITH LISTED FIREPROOFING MATERIALS, UTILIZING U.L.-APPROVED METHOD. SEE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND SPECIFICATION DIVISION 7.
- 15. PROVIDE SEISMIC SUPPORTS PER STATE OF CONNECTICUT BUILDING CODE AND NFPA 13 REQUIREMENTS. REFER TO STRUCTURAL DWGS FOR SEISMIC LOAD CRITERIA FOR THIS PROJECT.
- 16. ALL PIPING IS TO BE RUN CONCEALED IN CEILINGS OR WALLS. PIPING IS TO BE EXPOSED ONLY WHERE NOTED ON DRAWINGS. IF CONTRACTOR CANNOT RUN PIPING CONCEALED, NOTIFY ENGINEER IMMEDIATELY TO RESOLVE CONFLICT.
- 17. IN SMALL ROOMS OR CLOSETS WHERE SURFACE MOUNTED LIGHTS OR OTHER OBSTRUCTIONS EXIST, THE CONTRACTOR SHALL INSTALL STANDARD PENDENT HEADS WITH DEFLECTOR BELOW THE LEVEL OF THE OBSTRUCTION, OR MAINTAIN REQUIRED CLEARANCE FROM THE OBSTRUCTION PER OBSTRUCTION DEPTH ACCORDING TO RULES SET BY NFPA 13. DEEP CHROME ESCUTCHEONS MAY BE USED IF ABSOLUTELY NECESSARY. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY IF THESE ESCUTCHEONS ARE REQUIRED DUE TO THE CONCERN OF AESTHETICS OF THE SPRINKLER SYSTEM. SEE NFPA 13 FOR OBSTRUCTION CLEARANCE RULES.
- PIPING MAINS ARE SHOWN ONLY TO CLARIFY WHERE THE ENGINEER INTENDS THE PIPING TO BE LOCATED. THE CONTRACTOR SHALL NO DEVIATE FROM THE LOCATIONS SHOWN UNLESS IT IS PHYSICALLY IMPOSSIBLE TO INSTALL PIPING IN THOSE LOCATIONS. SPRINKLER CONTRACTOR SHALL RUN ALL OTHER REQUIRED PIPING TO SPRINKLER HEADS, TEST, DRAINS, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELBOWS, TEES, DROPS, AND MISCELLANEOUS PIPING REQUIRED DUE TO ELEVATION CHANGES, OBSTRUCTIONS, ETC. TO INSTALL A COMPLETE AND FULLY FUNCTIONAL SPRINKLER SYSTEM.
- 19. AT ALL LOCATIONS WHERE PIPING IS ATTACHED TO BEAMS, A GALVANIZED BEAM RESTRAINING STRAP MUST BE USED IN CONJUNCTION WITH GALVANIZED BEAM CLAMP.
- 20. CONCEALED SPACES ENCLOSED IN COMBUSTIBLE CONSTRUCTION EXIST AND OR MAY BE CREATED AS PART OF THE NEW CONSTRUCTION. IDENTIFY LOCATIONS OF SUCH SPACES AND PROVIDE SPRINKLER PROTECTION PER NFPA 13 FOR SAME.
- 21. DISCONNECT AND REMOVE ANY EXISTING LIMITED SPRINKLER SYSTEMS (JANITOR'S CLOSETS, ETC.). FED FROM DOMESTIC WATER SYSTEM. PROVIDE NEW SPRINKLER PROTECTION FROM NEW BUILDING AUTO-MATIC SPRINKLER SYSTEM, S SERVED FROM AREA SPRINKLER ZONE
- 22. DO NOT ROUTE BELOW HVAC EQUIPMENT LOCATED IN CEILING SPACES (TO FACILITATE UNIT REMOVAL), NOR IN THEIR REQUIRED
- SERVICE/ACCESS SPACES. REFER TO FINAL APPROVED EQUIPMENT MFR LITERATURE FOR REQUIRED ACCESS CLEARANCES. 23. IF SPRINKLERS ARE DAMAGED/MARRED PRIOR TO FINAL ACCEPTANCE BY OWNER, CONTRACTOR SHALL REPLACE WITH ENTIRELY NEW
- SPRINKLER. FIELD PAINTING OR ANY OTHER REPAIR IS NOT
- 4. ALL PIPING SHALL BE SUPPORTED FROM THE TOP CHORD OF STRUCTURAL MEMBERS. NOT FROM THE BOTTOM CHORD OR INTERMEDIATE WEB MEMBERS.

Expansion and Renovate as New Project - PHASE 1 of 3

SCALE: NONE

DETAIL OF WET PIPE

# Crystal Lake Elementary School

284 Sandy Beach Road Ellington, Connecticut 06029

ALARM CHECK VALVE

(4"MIN.) HYDR. SIZE –

FIRE SERVICE MAIN

AUX. DRAIN AT LOW POINT.

TO PLUMBING DWGS (TYP.)

FIRE SERVICE ENTRANCE AND ZONING SCHEMATIC

TO LOCAL FLOOR DRAIN-REFER

NOTE: PREFERRED INSPECTOR'S TEST LOCATION IS AT HYDRAULICALLY REMOTE PORTION OF SPRINKLER ZONE -

COORDINATE EXACT TEST LOCATIONS WITH ALL OTHER TRADES, LOCATE IN SECURE AREA, AND PIPE EACH

DISCHARGE TO OUTSIDE-OPENING OVER SPLASHBLOCK. REFER TO INSPECTOR'S TEST DETAIL ON THIS SHEET

SPRINKLER ZONE CONTROL ASSEMBLY

ISOLATION VALVE

6" FIRE SERVICE BELOW

IN WELL EQUIP. BLDG.),

AND THROUGH EXIST'G

FOUNDATION WALL IN SLEEVE -

SCALE: NONE

GRADE (FROM FIRE PUMP



SILVER / PETRUCELLI + ASSOCIATES Architects / Engineers / Interior Designers

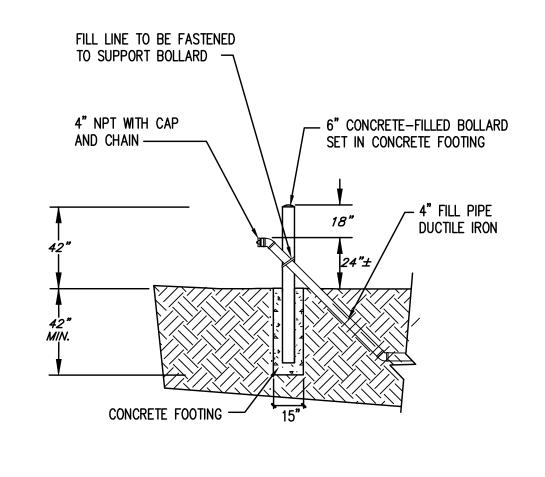
> 3190 Whitney Avenue, Hamden, CT 06518-2340 Tel. 203 230 9007 Fax. 203 230 8247 silverpetrucelli.com

Revision:	Description:	Date:	Revised By:
	ISSUED FOR BIDDING	NOV. 26, 20	13

# FIRE PROTECTION NOTES. LEGENDS & DETAILS

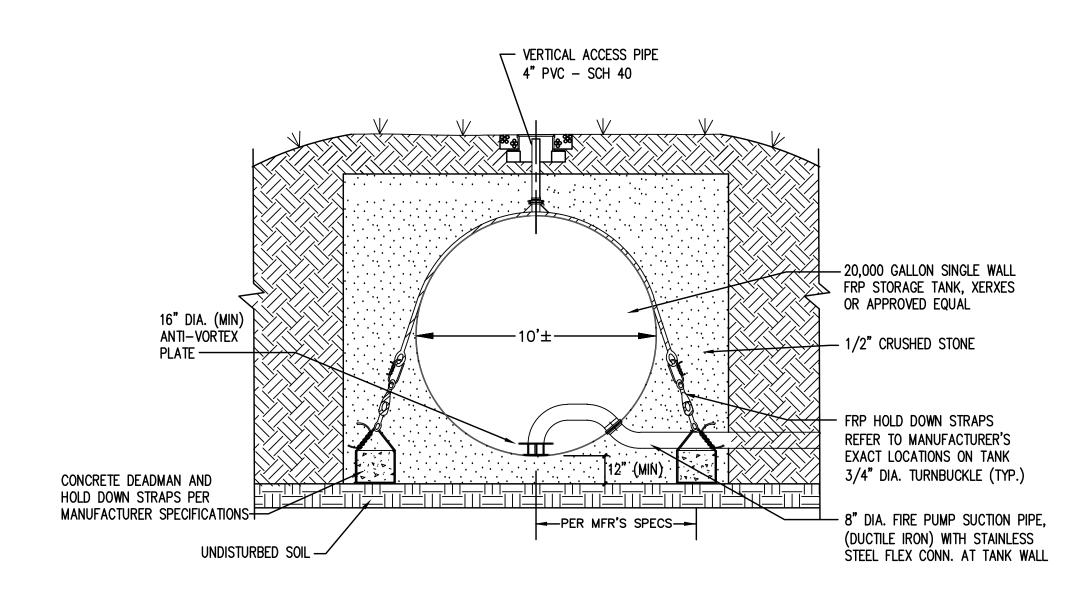
State Project Number: 048-0058 EA/RR/PS

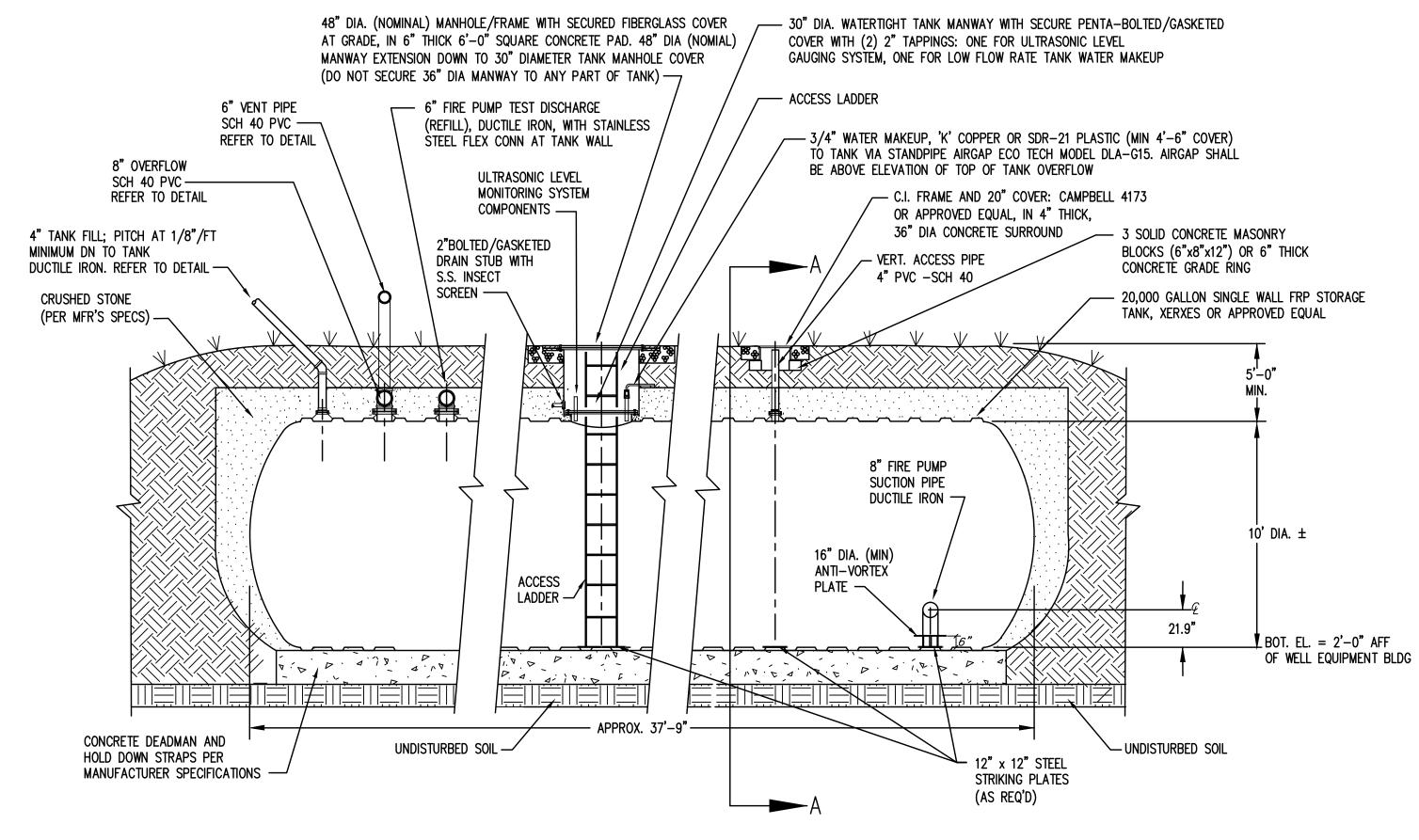
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Project Number:	



TANK FILL DETAIL

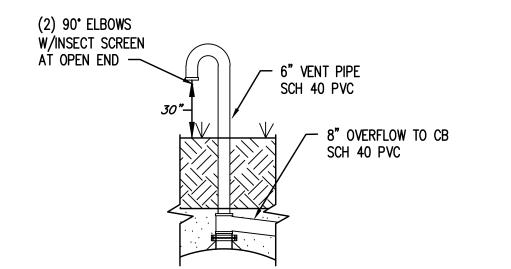
SCALE: NONE





ELEVATION SCALE: NONE

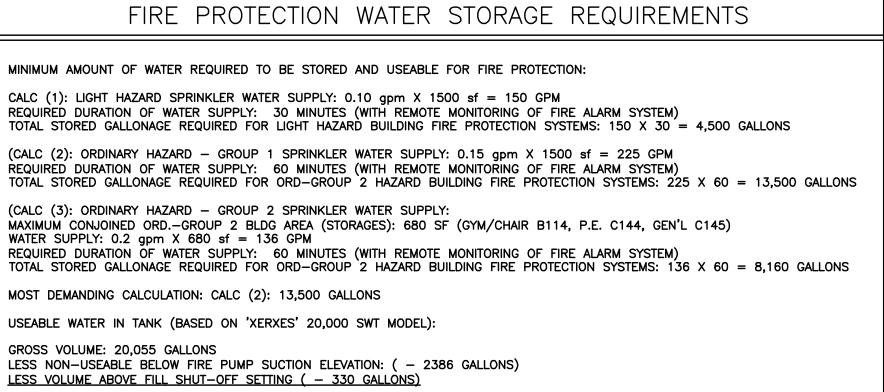
SECTION A-A SCALE: NONE

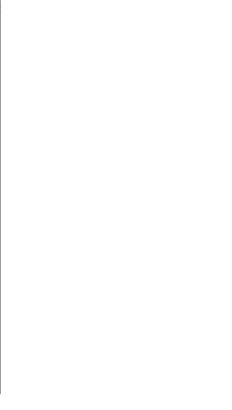




SINGLE-WALL UNDERGROUND STORAGE TANK

TANK VENT/OVERFLOW DETAIL SCALE: NONE







NET AVAILABLE TANK WATER FOR FIRE PROTECTION: 17,339 GALLONS

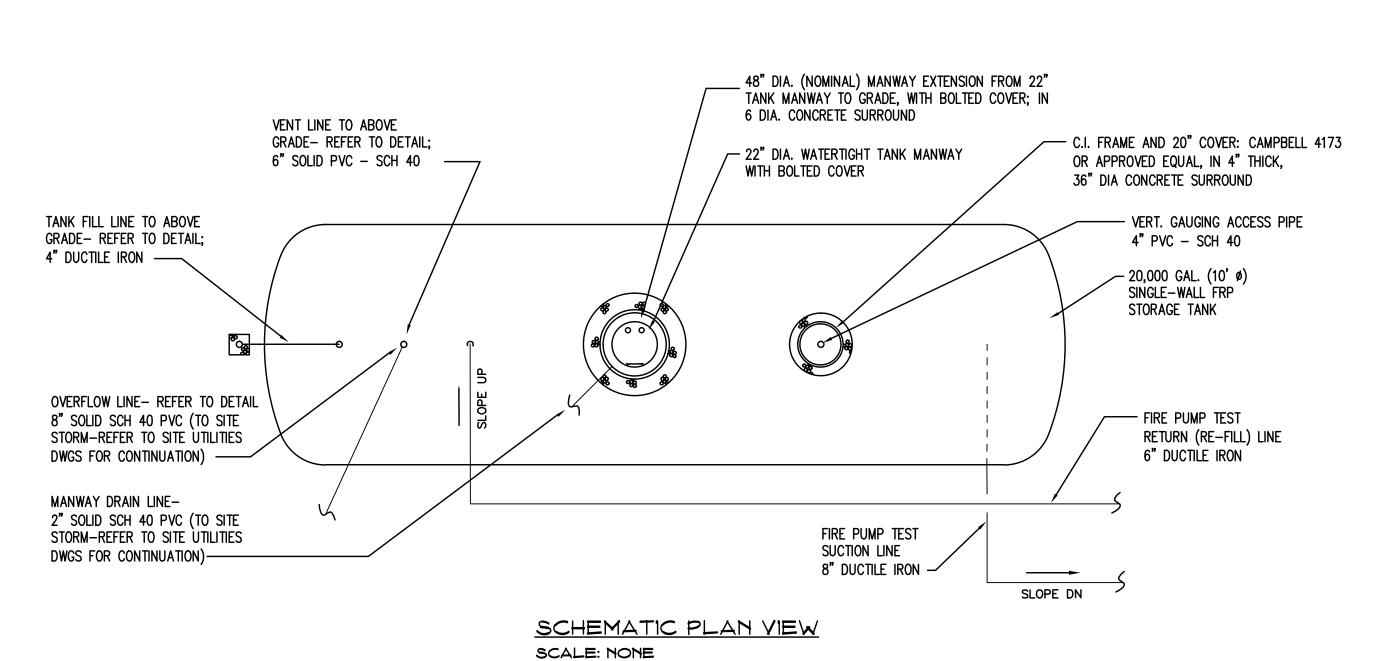
FOR THE EXTERIOR UNDERGROUND FIRE PROTECTION WATER STORAGE TANK, PROVIDE A LIQUID LEVEL MONITORING AND ALARM SYSTEM, CONSISTING OF LIQUID LEVEL MEASURING INSTALLATION AT THE TANK'S ACCESS MANWAY, AND REMOTE LEVEL READOUT AND ALARM, LOCATED IN ADJACENT WELLWATER EQUIPMENT BUILDING, WITH "TANK TROUBLE" RELAY TO SCHOOL BUILDING'S FIRE ALARM SYSTEM. ALL COMPONENTS SHALL BE FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR. COMPONENTS SHALL CONSIST OF:

AT TANK, FURNISH AND INSTALL: 'SIEMENS' MULTIRANGER 100 LIQUID LEVEL GAUGING SYSTEM USING ULTRASOUND TECHNOLOGY, INSTALLED IN THE TANK ACCESS MANWAY. PROVIDE 2" DIA. PIPE EXTENSION UP FROM THE TAP TO PROVIDE VERTICAL CLEARANCE FROM LIQUID AS REQUIRED BY MANUFACTURER FOR PROPER ULTRASOUND PERFORMANCE. INSTALL PER ALL OTHER MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS. IN WELLWATER EQUIPMENT BUILDING, WHERE INDICATED ON THE PLANS, FURNISH AND INSTALL:

'SIEMENS' MULTIRANGER 100 WALL-MOUNT NEMA 4X STYLE WASTE WATER LEVEL MONITOR/CONTROLLER WITH 4"X 1.5" MULTI-BLOCK LCD DISPLAY WITH BACKLIGHTING, AND RELAY TO ANNUNCIATOR (SEE BELOW). READOUT SHALL BE IN FEET OR INCHES AS SELECTED BY THE OWNER, AND SHALL INDICATE THE LIQUID LEVEL AS MEASURED FROM THE BASE OF THE TANK. 120V POWER INPUT, LOW VOLTAGE CONTROL/RELAY WIRING TO TANK AND LOCAL ANNUNCIATOR

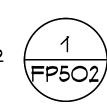
'PRECISION DIGITAL' VIGILANTE ANNUNCIATOR # PD141AFO AUDIO/VISUAL ALARM; AT A LEVEL 18" BELOW INSIDE (CENTERLINE) TOP OF TANK (APPROX. 18,290 GALLONS CAPACITY), THE GAUGING SYSTEM SHALL INITIATE A 'MAINTAINED' ALARM AT THE AUDIO/VISUAL ALARM PANEL, CONSISTING OF AUDIBLE ALARM (WITH ACKNOWLEDGE CONDITION "OFF" CAPABILITY), AND FLASHING RED LIGHT (WHICH CANNOT BE MANUALLY RESET, AND WILL REMAIN STEADY "ON" UNTIL THE LOW WATER CONDITION NO LONGER EXISTS). 120V POWER INPUT, LOW VOLTAGE CONTROL/ALARM/RELAY WIRING TO MONITOR/CONTROLLER REQUIRED. PROVIDE ALARM MESSAGE LABEL READING: "LOW LEVEL — APPARATUS PUMP TEST TANK". IN ADDITION, PROVIDE "TANK TROUBLE" RELAY FROM LOCAL ANNUNCIATOR TO SCHOOL BUILDING'S FIRE ALARM SYSTEM.

LEVEL MONITORING SYSTEM SHALL ALSO INITIATE OPENING THE TANK'S WATER MAKEUP (SOLENOID) SUPPLY VALVE AT A LEVEL 12" BELOW (CENTERLINE) INSIDE TOP OF TANK (APPROX. 19,100 GALLONS). AND CLOSING THE VALVE AT A LEVEL 6" BELOW (CENTERLINE) INSIDE TOP OF TANK (APPROXIMATELY 19,725 GALLONS) NOTE: COORDINATE ALL REQ'D POWER/ALARM/CONTROL/RELAY WIRING WITH ELECTRICAL CONTRACTOR. CONFIRM ACTUAL DIMENSIONS OF INSTALLED TANK, AND COORDINATE EXACT GAUGING/ALARM SYSTEM REQUIREMENTS WITH THE GAUGING/ALARM SYSTEM MANUFACTURER(S) PRIOR TO ORDERING GAUGING/ALARM SYSTEMS.



PROVIDE STAINLESS STEEL FLEX TANK CONNECTIONS ON PUMP SUCTION AND RETURN (REFILL) PIPING PER TANK MANUFACTURER'S REQUIREMENTS. ALL EXPOSED (ABOVE GRADE) PLASTIC PIPE SHALL BE PAINTED (RED) FOR PROTECTION FROM SUNLIGHT.

SINGLE-WALL UNDERGROUND STORAGE TANK DETAILS SCALE: NONE



Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School
284 Sandy Beach Road

Ellington, Connecticut 06029



SILVER / PETRUCELLI + ASSOCIATES Architects / Engineers / Interior Designers

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FIRE PROTECTION WATER STORAGE TANK DETAILS

JUNE 18, 2013 FP502 State Project Number: 048-0058 EA/RR/PS Project Number. 12.140

Drawing Number: